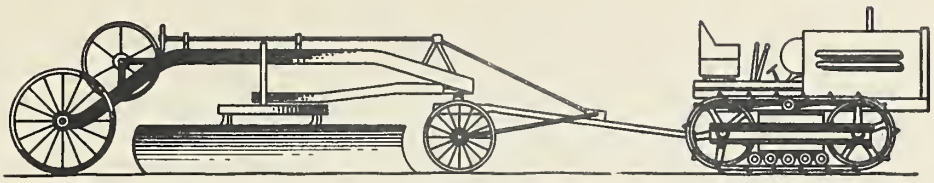
CONSTRUCTION HINTS



UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE
WASHINGTON, D.C.

Volume 7 July 1941 Number 4

An investigation has been conducted by the Superintendent of the CCC Motor Repair Shop, Grand Rapids, Minnesota and Mr. H. L. Lucht of the Ford Motor Company concerning complaints that have been received in connection with the operation of 1940 Ford Trucks. The results of this investigation, furnished by Mr. G. B. Harris of the office of the Director, CCC, appear on pages 2 and 3 of this issue.

The cone hook appearing on page 5 was designed by Mr. Ralph Cunningham, warehouseman on the Sierra National Forest. The Region reports that this device has been used on the Sierra for dragging cones from trees in connection with seed collection.

The gravel bin gate shown on page 6 was furnished by Region 4. Their letter of transmittal states: "While we are giving credit to Foreman Dave Temple and Mechanic Fern Henry for constructing this gate, the idea did not originate with them. The State of Idaho, Department of Public Works, Bureau of Highways, has been using this same type of hopper gate for some time, and the idea was obtained from one in operation near Salmon. The one constructed by the Salmon Forest is patterned largely after the State's."

E. S. MASSIE, Jr.,
Editor.

INFORMATION RELATIVE TO 1940 FORD TRUCKS

Radiator Leakage

The steel tubing used on the upper water outlet is too rigid as well as too short. 80% of the trucks in this territory have developed serious leaks in the upper tank after brief operation. At this shop we have been given regular rubber passenger car hoses in replacement. Each end of the steel tube is fitted to the rubber hose and the excess steel tube is returned to the Ford dealer so that he can secure credit on the rubber hoses provided.

Poor Mileage - Poor Compression

The poor mileage being experienced is the result of faulty carburetion, and, in turn, the excess gas consumption results in many cases of rapid ring wear and consequent poor compression. Several points to be checked on the carburetor are as follows:

If equipped with Ford carburetor, check small diaphragm at bottom for cracks. This diaphragm acts as a check and if cracked allows free passage of raw gas to cylinders. In many cases the float level will be found to be too high. This should be reset in accordance with Ford Manual. Also check fuel pump pressure. If higher than 2-½ pounds, gaskets should be installed between fuel pump and crankcase, or, if special Ford gauge is available, arm on fuel pump should be set to achieve correct pressure.

If truck is equipped with a Stromberg carburetor, the main jet should be checked for straightness. Also check float level and needle and seat assembly.

Cracked Hood Side Panel, Radiator Shell or Grille

Late 1940 trucks were equipped with a front fender cross support rod running across engine ahead of generator to overcome this difficulty. However, early 1940 trucks did not come equipped with this support rod. Agencies should check their trucks and report all trucks which are without this support. Ford will furnish rod, brackets, bolts, and washers without charge.

Battery Support Brackets Cracking

This is caused by the action between frame and body, on bracket being attached to each. Trouble can be overcome by attaching both brackets to either frame or body, whichever is most practicable.

Fan Blade Damaging Radiator Core

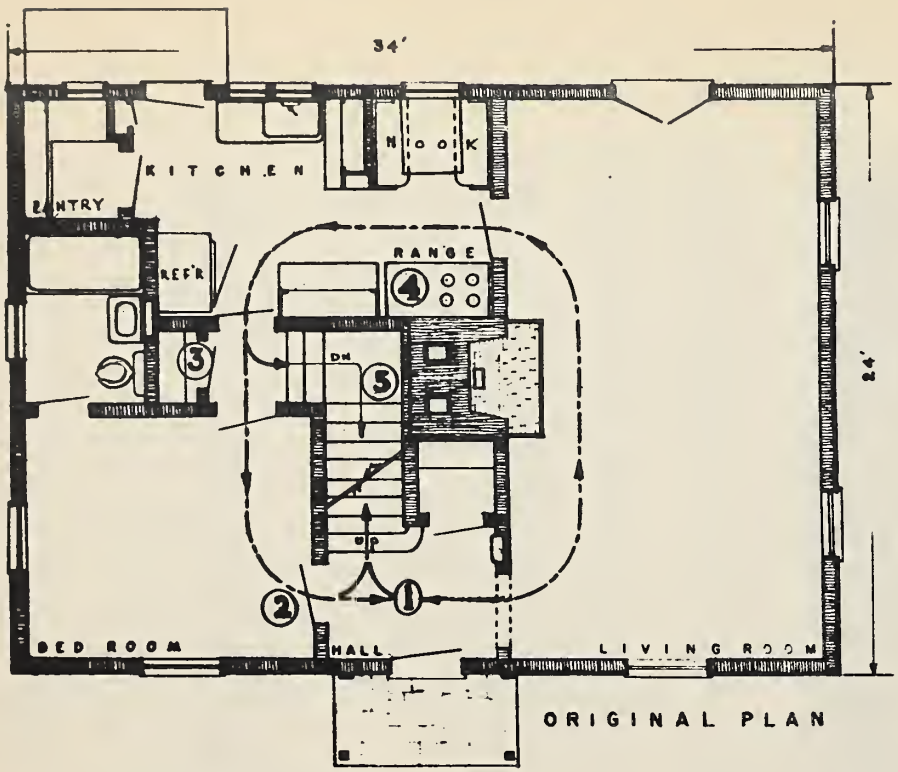
The front springs on pickups are too weak and the road clearance is reduced to the point that rough roads, ice or other obstructions strike dust shield. This shield is not reinforced in any way and is driven up against fan which in turn is forced into the radiator. The Ford Motor Company has the matter of weak springs under advisement and will no doubt take some remedial action in the near future. Pending such action, as a protective measure, we are installing a 1/8" sheet steel guard under the dust pan. This guard is attached to the front cross member and is sufficiently strong to prevent the dust pan being forced out of position.

Excessive Sludge and Oil Pump Screen Failures

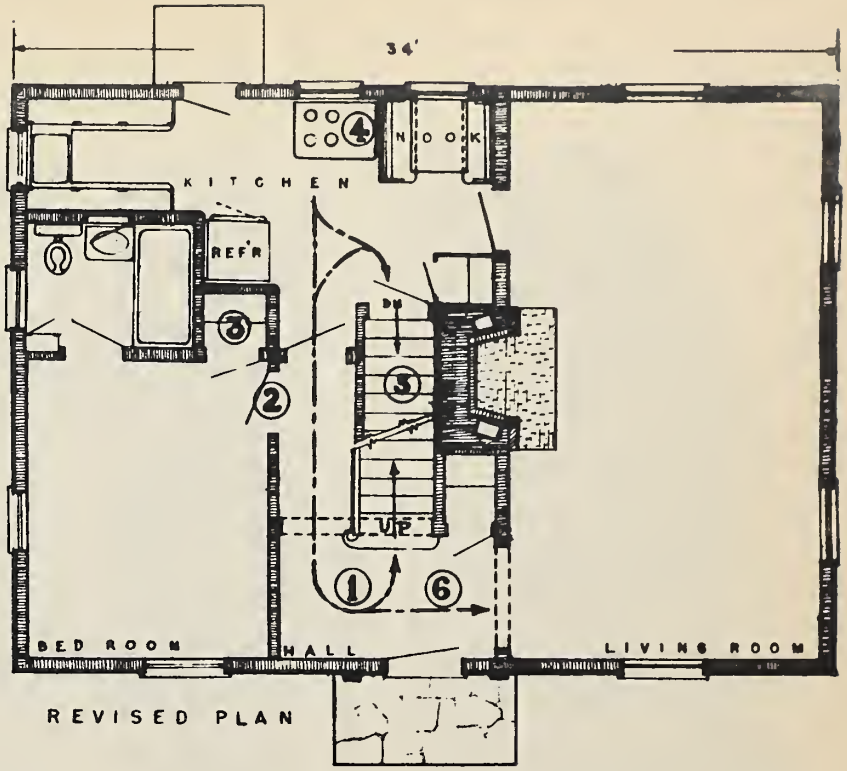
The 160° thermostat furnished on Fords is too low for this territory. 180° thermostat available from Ford should be installed to correct above difficulties. Will also give improved gas mileage. Another cause of excessive sludge was found to lie in loose head bolts which allowed Prestone to leak into crankcase. Mr. Lucht recommended a periodic check on all head bolts with a torque indicating wrench to specified tensions.

Cab Bracket Breakage

We have taken up the matter of left front cab brackets which are beginning to break on 1940 dumps and stakes. No apparent cause has been determined and no remedy has as yet been suggested. We will relay any further information received on this matter.



ORIGINAL PLAN



REVISED PLAN

COMPARATIVE PLAN STUDY

By W. Ellis Groben

Recently, the "Original" Plan was submitted for recommendations to improve it without increasing the external dimensions, changing the general arrangement, or increasing the cost.

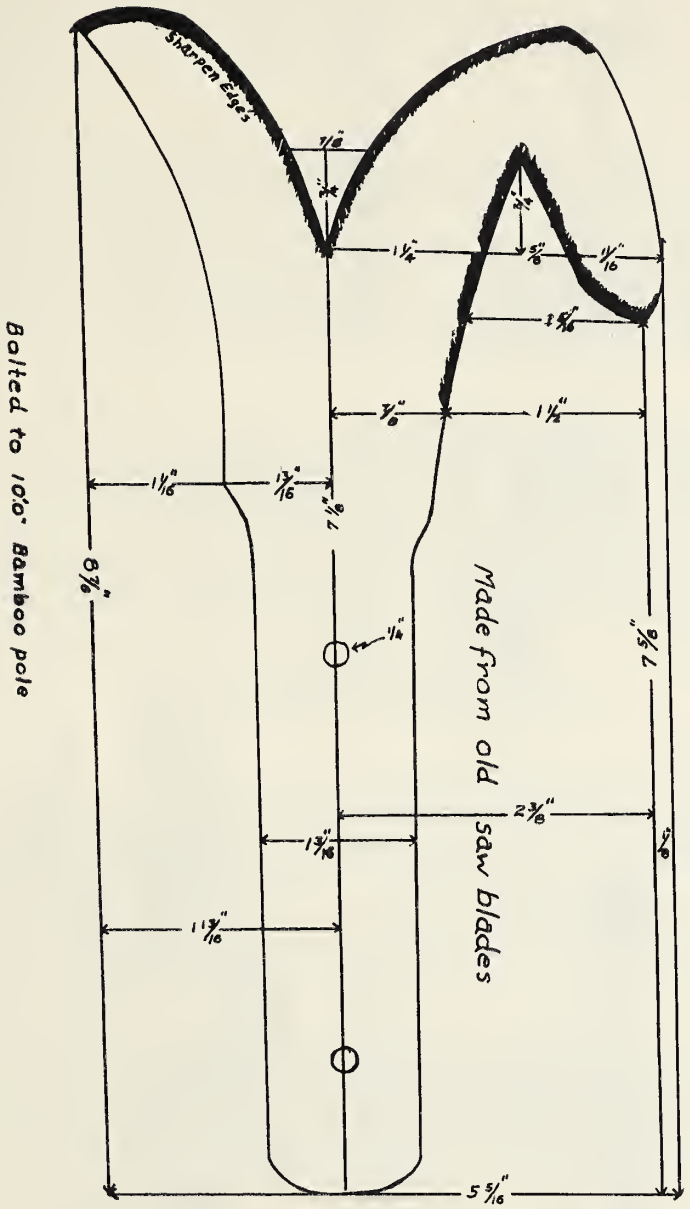
The problem became a fascinating one resulting in the Revised Plan shown above.

1. Improper circulation through rooms.
2. Bed Room lacks privacy; door opens on Entrance Hall.
3. Bed Room closet outside room.
4. Cook must work in own shadow - artificial illumination required.
5. Stairway unnecessarily complicated and dark.

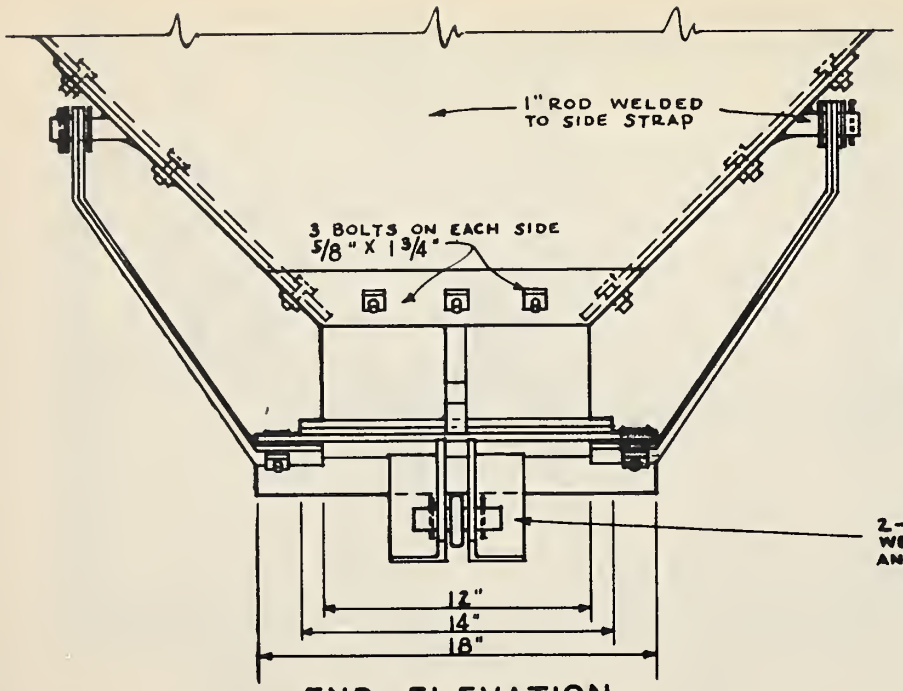
1. Hallway introduced to avoid circulation through rooms.
2. Corrected.
3. Provided within Bed Room.
4. Corrected.
5. Simplified and cheapened.
6. Entrance Hall enlarged.

The solution is an excellent example of the need for thorough plan study. It illustrates how a

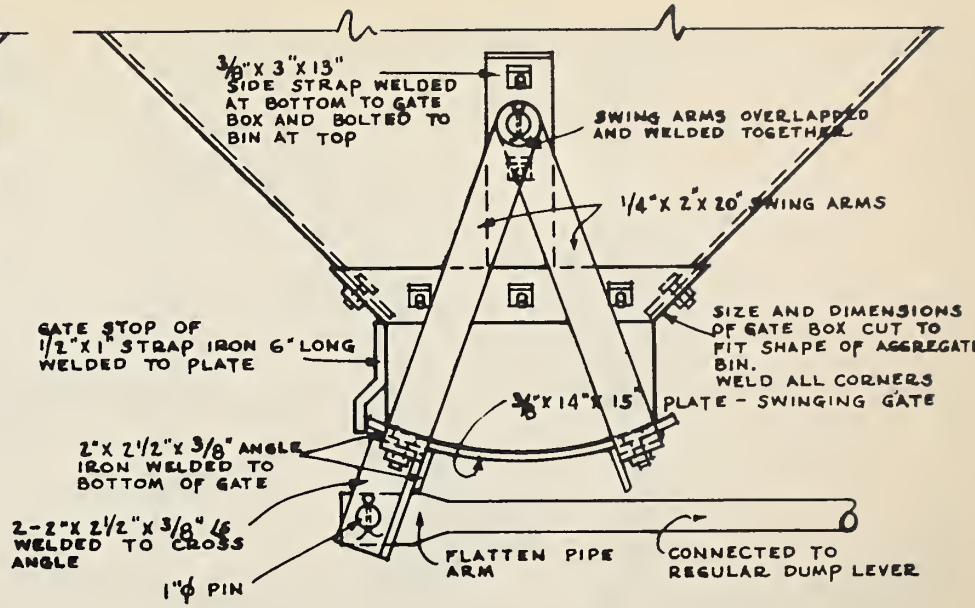
CONE HOOK
SIERRA



DESIGNED-RALPH CUNNINGHAM
DRAWN - H.A.B. RYARS
June 1940



END ELEVATION



SIDE ELEVATION

LIST OF MATERIAL

Bolts - 12	5/8" x 1-3/4" Bolt gate box to bin
" - 4	5/8" x 1-3/4" " side plate to bin
" - 4	5/8" x 1-3/4" " swing arms to gate
Boiler Plate - 1	3/8" x 14" x 15" Gate
Strap Iron - 4	1/4" x 2" x 20" Swing arms
Strap Iron - 2	3/8" x 3" x 13" Plate bolted to bin
Plate - 4	3/8" x 8" x 18" Sides of Gate Box (cut to fit aggregate bin)
Rod - 3	1" ϕ x 4" long Swing shafts
Washers - 4	1" size At swing arms
Cotter pins - 4	1/4" x 2" Key swing arms to shaft
Angle Iron - 2	2" x 2½" x 3/8" - 18" long
Strap Iron - 1	1/2" x 1" x 6" Gate stop
Angle Iron - 2	2" x 2½" x 3/8" - 5" long

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE - REGION 4

GATE FOR GRAVEL BIN

CONSTRUCTED BY
DAVE TEMPLE AND FERN HENRY
SALMON NATIONAL FOREST

SODIUM FILLED ENGINE VALVES

The office of the Chief of the Air Corps, War Department, has made public a bulletin describing the precautions necessary when disposing of the sodium filled engine valves. The stems of these valves are hollow and are filled with sodium. This melts under engine temperature and assists in carrying away the heat produced at the valve head.

The War Department recommends that when disposing of these valves that they be tossed overboard in a lake, river, or some similar place. Should the valves be subjected to excessive heat such as might be the case when sold as scrap for blast furnace remelting or where attempts might be made by mechanics to cut such valves with acetylene torches for making punches or similar tools, violent explosions might occur. We understand that such cases have already been reported.

The aviation industry is of course the big user of this type of valve but the White Truck Company has recently adopted them, also. As far as known, however, none of these valves have come into Forest Service use but the possibilities of this occurring are apparent. This information is therefore furnished for the guidance of mechanics or others who might come in contact with the above engines or future engines in which the valves might be employed.

LUBRICATION GUIDE CORRECTION

Strike out 1042 and 1047, Navy symbol oils, on page 2. These are aviation oils and are not at present available under any Navy contract, although they may be available after July 1.

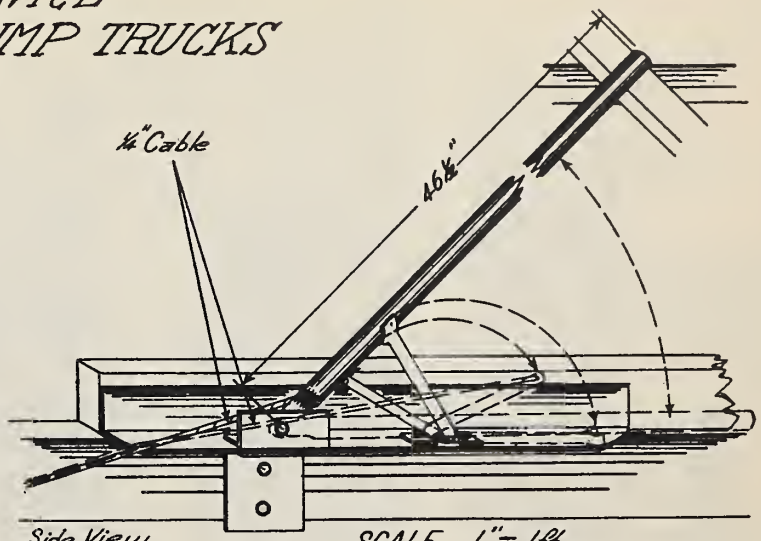
On page 5, under Motor Patrols, opposite Hydraulic Cylinders, under Winter (right hand side) strike out 1047. Use 2110 or in below zero weather 2075.

On page 2, for 5190 Navy symbol oil, change SAE 250 to SAE 140. 5190 oil is a low SAE 250 which is about the same as a high SAE 140, but it will avoid confusion and be consistent with information distributed by the Texas Company in its Service Handbook and the marking of the oil containers, if our guide shows SAE 140.

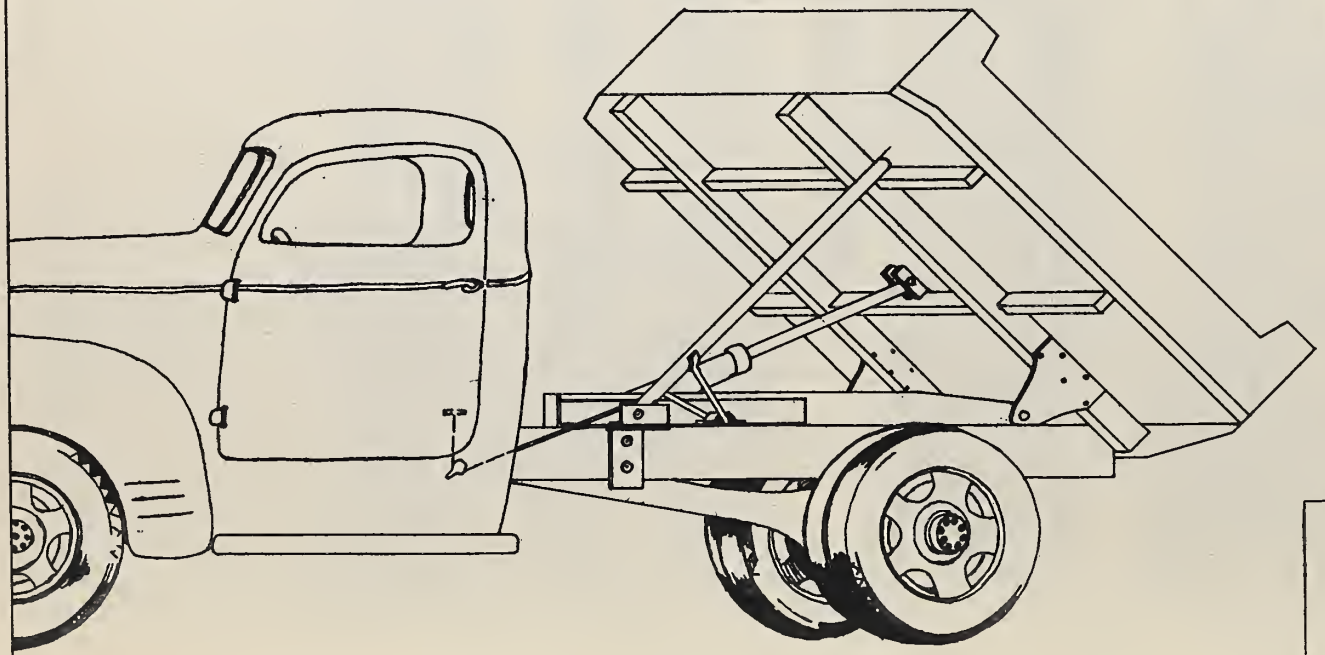
SAFETY DEVICE FOR DODGE DUMP TRUCKS

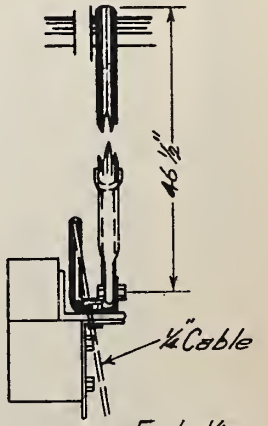
List of Material

1 Piece 1¼" pipe 46½" long
1 Piece 1" steel rod 20" long
4' steel cable ¼"
1 Small pulley
1 Piece angle iron ¼"X2"X2"X5
1 Piece strap iron ⅝"X1½"X5"
1 Piece strap iron ⅝"X1½"X3"
1 Bolt ½"X1½"
4 Bolts ½"X1¼"



Side View SCALE 1" = 1ft.





End View

CCC Camp P-81
Wewahitchka, Fla.
Designed By- Squad Fr. Cowart
Drawn By- Joseph Padgett